KELDYSH, M.V., akademik

Creation of possibilities for transforming nature is the highest achievement of science. Priroda 52 no.12:18-20 '63. (MIRA 17:3)

KELDYSH, Mstislav Vsevolodovich; SEDOV, Leonid Ivanovich

[Application of the theory of functions of a complex variable to hydrodynamics and aerodynamics; review of some works of the Moscow school] Prilozheniia teorii funktsii kompleksnogo peremennogo k gidrodinamike i aerodinamike; obzor nekotorykh rabot Moskovskoi shkoly. Moskva, Izd-vo "Nauka," 1964. 45 p. (MIRA 17:5)

KELDYSH, M.V., akademik; SIFOROV, V.I.; VERNOV, S.N.

Explorers of the Universe. Kryl.rod. 15 no. 4:6-7 Ap '64.
(MIRA 17:5)

1. Presidnet Akademii nauk SSSR. (for Keldych). 2. Chleny-korrespondenty AN SSSR (for Siforov, Vernov).

KELDYSH, M.V., akademik

Toward close unity of the forces of science of the country; introductory address of the President of the Academy of Sciences of the U.S.S.R., Academician M.V.Keldysh. Vest. AN SSSR 34 no.3:5-12 Mr '64. (MIRA 17:4)

1. Prezident AN SSSR.

KELDYSH, M.V., akademik

Scientists, winners of the Lenin Prize in 1964. Vest. AN SSSR 34 no.5:3-10 My '64. (MIRA 17:6)

1. Prezident AN SSSR.

ACCESSION NR: AP4041395 S/0020/64/156/006/1312/1315

AUTHOR: Krinskiy, V. I.; Keldy*sh, M. V. (Academician)

TITLE: A construction of a robot's sequence and its behavior in games

SOURCE: AN SSSR. Doklady*, v. 156, no. 6, 1964, 1312-1315

TOPIC TAGS: cybernetics, control theory, gaim theory, robot game, robot memory

ABSTRACT: The communication deals with the construction of an assymptotically optimal sequence of robots and the gaim of two such robots with null sum. The problem of the behavior of robots in random media and games was described by M. L. Tsetlin (UMN 18, #4, 1963); and the definitions of that paper are used in the precent one. It is shown that if the memory volume of two playing robots is increasing indefinitely, then the gain limit is between the upper and lower game prize. If, in addition, there is a limit of the ratio of the memory volume of the second robot to that of the first robot, then the limiting gain of the first robot is a monotonically increasing function of that ratio. Orig. art. has: 1 figure and 8 equations.

Card 1/2

ACCESSION NR: AP4041395

ASSOCIATION: Institut biologicheskoy fiziki, Akademii nauk SSSR (Institute of Biological Physics, Academy of Sciences SSSR)

SUBMITTED: 18Jan64 ENCL: 00

SUB CODE: MA, DF NO REF SOV: 002 OTHER: 000

Card 2/2

KELER, V.A., otv. red.; MILLIONSHCHIKOV, M.D., akademik, red.; BLOKHIN, N.N., red.; BLOKHINTSEV, D.I., red.; GNEDENKO, B.V., akademik, red.; ZAYCHIKOV, V.N., red.; KELDYSH, M.V., akademik, red.; KIRILLIN, V.A., akademik, red.; KORTUNOV, V.V., red.; MONIN, Andrey Sergeyevich, prof., doktor fiz.-matem. nauk, red. (1921); NESMEYANOV, A.N., akademik, red.; PARIN, V.V., red.; REBINDER, P.A., akademik, red.; SEMENOV, N.N., akademik, red.; FOK, V.A., akademik, red.; FRANTSOV, G.P., akademik, red.; ENGEL'GARDT, V.A., akademik, red.; KREMNEVA, G., red.; BALASHOVA, A., red.; BERG,A.I.,akademik,red.

[Science and mankind, 1964: simple and precise information about the principal developments in world science] Nauka i chelovechestvo, 1964.; dostupno i tochno o glavnom v mirovoi nauke. Moskva, Izd-vo "Znanie," 1964. 424 p.
(MIRA 18:1)

1. Deystvitel'nyy chlen AMN SSSR (for Blokhin, Parin). 2. Chlen-korrespondent AN SSSR (for Blokhintsev). 3. Akademiya nauk SSSR Ukr.SSR (for Gnedenko).

KELDYSH, M.V., akademik

Annual meeting of the Academy of Sciences of the U.S.S.R.; let's strengthen the link between science and practice. Priroda 54 no.3:2-5 Mr '65. (MIRA 18:4)

1. Prezident AN SSSR.

L 44171-65

ACCESSION NR: AP5008825 UR/0026/65/000/003/0002/0005

AUTHOR: Keldysh, M. V. (Academician) 5

TITLE: Bonds between science and its application should be strengthened 13

SOURCE: Priroda, no. 3, 1965, 2-5

TOPIC TAGS: scientific conference, scientific research administration

ABSTRACT: In the past year Soviet scientists obtained much scientific data. The launchings of Voskhod, Polyet-2, and the Kosmos series of satellites gave new information about outer space. In launching the automatic station Zond-2, the electroreactive plasma engine was tried for guidance and orientation. In mathematics important results were obtained at the Moskovskiy universitet (Moscow University) on the theory of dynamic systems. Gratifying results were also achieved in algebraic topology. In physics, research on quantum electronics is developing at the Fizicheskiy institut im. P. N. Lebedeva (Physics Institute). New types of quantum generators are also being constructed there. Utilization of quantum generators in research and practice has been expanded. Soviet scientists succeeded in developing new methods in atomic energetics and direct transformation of heat into electrical energy with the reactor Romashka. Work on the mathematical description of chemical

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L 44171-65
ACCESSION NR: AP5008825

processes is progressing slowly. Studies on using chemicals in farming was broadened at the Academy of Sciences and at the Republics' Academies. Also, in latter years, the Presideum of the SSSR Academy of Sciences was directing much attention to economics. Studies of biology (primarily in molecular biology and genetics) are lagging, due to the changes introduced in the basic concepts by T. D. Lysenko and his colleagues. In view of the party's program, however, the situation in the area of biological science has been improved. In further efforts for improving this situation, attention should be directed toward scientific and organizational problems, whereas administrative pressures should be removed. Concurrently with the development of scientific research, the Academy of Sciences should expedite the application of research in technology and economics.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: GO

NO REF SOV: 000 OTHER: 000

Card 2/2

L 2476-66 FSS-2/EWT(1)/FS(s)/EWA(d) TT/GW

ACCESSION NR: AP5025243 UR/0026/65/000/009/P002/P00

AUTHOR: Keldysh, M. V. (Academician); Lebedinskiy, A. I. (Professor); Khodarev, Yu. K. (Engineer); Masevich, A. G. (Doctor of physico-mathematical sciences)

TITLE: First results of an important experiment [Preliminary evaluation of Zond-3 moon photos]

SOURCE: Priroda, no. 9, 1965, II-IV

TOPIC TAGS: moon, Zond 3, lunar topography, selenology, moon far side, lunar probe, lunar surface, selenography

ABSTRACT: A preliminary evaluation is given of the photographs of the far side of the moon obtained by Zond-3. The following observations are based on statements made by M. V. Keldysh, A. I. Lebedinskiy, Yu. K. Khodarev, and A. G. Masevich at a press conference held on 23 August 1965. Spectra of the lunar surface were photographed in the 3500—2500-Å wavelength range, and spectrophotometry was carried out in the ultraviolet range from 2700 to 1900 Å and in the infrared from 4 to 3 microns. The probe employed a specially devised small-size phototelevision system that ensured protection of the film against cosmic radiation. The camera had an objective with a focal length of 106.4 mm and a relative aperture of 1:8. Special film 25 mm in width and exposure times of 1/100 and 1/300 sec were used. The photographs were ex-

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L 2476-66
ACCESSION NR. AP5025243

amined at the Shternberg State Astronomical Institute under the direction of Yu. N. Lipskiy. They showed few extended dark depressions of the far side. The northern part of the moon facing the earth consists mostly of seas, while the far side is almost completely covered by a gigantic continent. So-called talassoids, extensive depressions whose floor is covered by craters, appeared on the far side. These formations are similar in size to the seas on the near side, but differ in coloration. A high degree of crater concentration is evident on the far side. The photographs also confirm the asymmetry of the moon relative to a plane dividing the near and far sides. It is concluded that, in general, the far side has fewer seas and is brighter and more mountainous than the near side. [DM]

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: AA

NO REF SOV: 000 OTHER: 000 ATD PRESS: 4105

BVK
Card 2/2

ARTSIMOVICH, L.A., akademik; KELDYSH, M.V., akademik; KAPITSA, P.L., akademik; VUL, B.M.; VERESHCHAGIN, L.F.; PISTOL'KORS, A.A.; SHCHEGLOV, A.N., akademik; SKOBEL'TSYN, D.V., akademik; ALEKSANDROV, A.P., akademik; AMBARTSUMYAN, V.A., akademik; ZEL'DOVICH, Ya.B.; SEMENOV, N.N., akademik; KOTEL'NIKOV, V.A., akademik; LIFSHITS, I.M.; VEKSLER, V.I., akademik; GINZBURG, V.L.; MILLIONSHCHIKOV, M.D., akademik

Some problems in the development of modern physics; discussion of the work of the Department of General and Applied Physics. Vest. AN SSSR 35 no.2:3-46 F '65. (MIRA 18:3)

1. Chleny-korrespondenty AN SSSR (for Vul, Vereshchagin, Pistol'kors, Lifshits, Ginzburg).

KELDYSH, M.V., akademik

Opening speech of the President of the Academy of Sciences of the U.S.S.R., Academician M.V.Keldysh. Vest.AN SSSR 35 no.3:5-10 Mr '65. (MIRA 18:4)

1. Prezident AN SSSR.

KELDYSH, M.V., akademik

Lenin prize winners in 1965. Vest. AN SSSR 35 no.5:3-10 My '65.
(MIRA 18:6)

1. Predsedatel' Komiteta po Leninskim premiyam v oblasti nauki i tekhniki.

[illegible], [illegible], akademik; [illegible]
[illegible]NOV, A.A., akademik-[illegible]

Unprecedented scientific experiment [illegible] conference on the new outstanding [illegible] people in mastering the outer space and [illegible] the astronauts P.I. Beliaev and A.A. Le[illegible] first to achieve the exit [illegible] ship "Voskhod 2". Prir[illegible]

1. President AN SSSR (for [illegible]); [illegible] "[illegible]" (for Belyayev). 3 [illegible] "[illegible]" (for Leonov).

[redacted]

[redacted] science and technical progress. Priroda 54 no.11:2-5 '65.
(MIRA 18:11)

1. President AN SSSR.

L 32926-66 EWP(k)/EWT(d)/EWT(m)/T/EWP(1)/EWP(v)/EWP(t)/ETI IJC/HW/JT/JXT(EX)
ACC NR: AP6019637 (A) SOURCE CODE: UR/0030/66/000/005/0003/0010

AUTHOR: Keldysh, M. V. (Academician; Chairman of the committee for Lenin prizes in the field of science and technology)

4/1
8

ORG: none

TITLE: Lenin Prizes for metallurgy

SOURCE: AN SSSR. Vestnik, no. 5, 1966, 3-10

TOPIC TAGS: automatic welding, flash welding, rail welding, mobile welder, rail welder, Lenin prize

14

ABSTRACT: A Lenin Prize has been awarded to Corresponding Member of the Ukrainian Academy of Sciences V. K. Lebedev, Candidate of Technical Sciences S. I. Kuchuk-Yatsenko, V. A. Sakharnov, S. A. Solodovnikov, and Engineer L. A. Korobanov, all staff members of the Electric Welding Institute im. Ye. O. Paton, for the development of a method and equipment for automatic flash welding of rails under field conditions. This method works according to a set program, improves the joint quality, lowers power consumption by 75—80%, and doubles the efficiency of rail welding as compared to other methods. The design of the new mobile rail-welders reduces their weight and power consumption as compared to stationary machines. [FM]

SUB CODE: 13/ SUBM DATE: none/ ATD PRESS: 5027

Card 1/1

L 04572-67 FSS-2/EWT(1) IJP/GW

ACC NR: AP6033266 SOURCE CODE: UR/0020/66/170/004/0799/0802

AUTHOR: Akim, E. L.; Keldysh, M. V. (Academician) 41 B

ORG: none

TITLE: Determining the gravitational field of the Moon by the artificial Moon satellite Luna-10

SOURCE: AN SSSR. Doklady, v. 170, no. 4, 1966, 799-802

TOPIC TAGS: Moon, gravitational field, Moon artificial satellite, gravitational potential

ABSTRACT: To determine the noncentral gravitational field of the Moon, the motion of the artificial Moon satellite "Luna 10" is analyzed with gravitational forces of the Earth and the Sun taken into account. From the statistically processed measurements of the trajectory of Luna-10 carried out over the period of its existence (from April 3 to May 30, 1966), it is established that the effect of noncentrality of the gravitational field of the Moon is an essential factor in the evolution of the orbit of Luna-10. The perturbations of its circumlunar orbit due to noncentrality of the gravitational field of the Moon are particularly noticeable in the evolution of the longitude of the ascending node Ω and the angular distance of the pericenter to the ascending node ω. The perturbations of elements Ω and ω of Luna-10 during the time of its existence (460 revolutions) due to noncentrality of the gravitational field

Card 1/2 UDC: 521

L 04572-67

ACC NR: AP6033266

of the Moon and due to gravitational effects of the Earth and the Sun (the gravitational effects of other planets are neglected) are presented as functions of the number of revolutions of the Moon satellite. A comparison of the results shows that perturbations for Luna-10 due to noncentrality of the gravitational field of the Moon exceed the perturbations due to gravitational forces of the Earth and the Sun 5 to 6 times. The gravitational potential of the Moon is taken in the form of expansion in spherical functions with unknown coefficients (the gravitational field parameters) C_{nm} and d_{nm} ($n = 2, 3, \ldots, m = 0, 1, \ldots n$). As a result of processed measurement data, the numerical values for eleven expansion coefficients are derived which are presented with maximum possible errors. To illustrate the determined gravitational potential of the Moon, the level surface passing through the point with spherical coordinates $r = 1738$ km, $\psi = 0$, $\lambda = 0$ is analyzed. The level lines obtained by intersecting this surface by the equatorial plane of the Moon, the zero meridian plane ($\lambda = 0$), and the plane corresponding the meridian $\lambda = 90°$ are presented. Orig. art. has: 4 figures.

SUB CODE: 03/ SUBM DATE: 13Sep66/ OTH REF: 001/ ATD PRESS: 5100

Card 2/2 vmb

KELDYSH, V. M.

35252. Zhelezobeton i Puti Ego Razvitiya v Posyevoennyy Period. Trudy IV Vsesoyuz. Konferentsii Po Beton i Zhelezobeton. Konstruktsiyam. Ch. I. M. -L. 1949, S. 37-45

SO: Letopis 'Zhurnal 'nykh Statey Vol. 34, Maskva, 1949

KELDYSH, V.M.

KELDYSCH, W. M., edited by (Baitsa, W. A., Goldenblat, I. I., Kotschenow, W. M., Pildisch, M. J., and Tal, K. E.). Berechnung von Baukonstruktionen nach den Grenzbeanspruchungen (translation from Russian). Berlin, BEV Verlag Technik. 1953, 257 pp.

KELDYSH, V. M.

Konstruktsii vysotnykh zdaniy (Designs of Tall Buildings), a symposium, edited by Professor V. M. Keldysh, Active Member, Academy of Architecture, USSR, K. A. Antonov, Corresponding Member, Academy of Architecture, USSR, and N. A. Popov, Press for Literature on Building and Architecture, 16 sheets. 1953

The symposium contains articles devoted to theoretical and experimental investigations on the design of tall buildings, giving conclusions and recommendations, and including "Instructions for the Planning of External Walls of Tall Buildings", and "Technical Factors in the Preparation and Application of Mortar for Laying and Facing External Walls of Tall Buildings".

The symposium is intended for engineer-designers and builders, as well as for scientific workers and post-graduate students.

SO: U-6472, 18 Nov 1954

KELDYSH, V.M.

STRELETSKIY, N.S., professor, doktor tekhnicheskikh nauk; KELDYSH, V.M., professor, doktor tekhnicheskikh nauk; GVOZDEV, A.A., professor, laureat Stalinskoy premii, doktor tekhnicheskikh nauk; ONISHCHIK, L.I., professor, doktor tekhnicheskikh nauk; GOL'DENBLAT, I.I., doktor tekhnicheskikh nauk; KARTASHOV, K.N., kandidat tekhnicheskikh nauk; BALDIN, V.A., kandidat tekhnicheskikh nauk; TAL', K.E., kandidat tekhnicheskikh nauk.

Discussion of the problem of building calculations using the method of limiting states. Stroi.prom. 32 no.4:41-42 Ap '54. (MLRA 7:5)

1. Chlen-korrespondent Akademii nauk, deystvitel'nyy chlen Akademii arkhitektury (for Streletskiy). 2. Vitse-prezident Akademii arkhitektury (for Keldysh). 3. Chlen-korrespondent Akademii arkhitektury (for Gvozdev). 4. Chlen-korrespondent Akademii arkhitektury (for Onishchik). (Building--Tables, calculations, etc.) (Reinforced concrete construction)

KELDYSH, V.M., professor

Terminology in the field of prestressed reinforced concrete.
Bet.i zhel.-bet. no.7:292-294 Jl '57. (MIRA 10:11)
(Prestressed concrete--Terminology)

SAKHNOVSKIY, Konstantin Viktorovich, prof., doktor tekhn.nauk; KELDYSH, V.M., prof., doktor tekhn.nauk, retsenzent; TREPENENKOV, R.I., dotsent, kand.tekhn.nauk, nauchnyy red.; KOTIK, B.A., red. izd-va; GILENSON, P.G., tekhn.red.

[Reinforced concrete structures] Zhelezobetonnye konstruktsii. Izd. 8., perer. Moskva, Gos. izd-vo lit-ry po stroit., arkhit. i stroit. materialam, 1959. 839 p. (MIRA 12:2)

1. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury SSSR (for Sakhnovskiy, Keldysh).
(Reinforced concrete construction)

KELDYSH, V.M., prof., doktor tekhn.nauk; SINITSYN, A.P., prof., doktor tekhn.nauk; POPOV, G.I., dotsent, kand.tekhn.nauk; ZHDANOV, V.S., dotsent, kand.tekhn.nauk

"Design of reinforced concrete axially symmetrical elements (shells)" by A.M. Ovechkina. Reviewed by V.M. Keldysh and others. Bet. i zhel.-bet. 8 no.10:477-478 O '62. (MIRA 15:11)

1. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury SSSR (for Keldysh).
(Roofs, Shell)
(Ovechkina, A.M.)

KELDYSH, V. V.,

"Cascades of Profiles in Supersonic Flow," Collection of Theoretical Papers in Aerodynamics, Moscow, Oborongiz, 1957.

Cent. Aero-Hydrodynamics Inst. im. Prof. N. Ye. Zhukovskiy

This collection assembles a number of scientific reports, on theoretical aerodynamics, first printed in various publications between 1947 and 1952, and intended for research workers in advanced aerodynamics.

Keldysh, V.V. Cascades of Profiles in Supersonic Flow 430

The report, first published in 1949, presents an approximate (linearized) theory of cascades of profiles in supersonic flow for which the velocity component which is perpendicular to the cascade axis is larger than or equal to the speed of sound. A study is made of the effect of the cascade parameters and the profile shape on the cascade characteristics, and a comparison is made between a profile in a cascade and an isolated profile. The report is divided into the following sections: Symbols; Introduction; 1. Basic formulas; 2. Regimes of supersonic flow around cascades of profiles; 3. Aerodynamic forces acting on a profile in a cascade, and velocity field behind the cascade; 4. Calculation of the lift on a profile in a cascade; 5. Investigation of effect of cascade parameters and of profile shape on characteristics of turbine rotors; 6. Comparison of a profile in a cascade with an isolated profile. The report contains 22 figures. There are 3 references, of which 2 are Soviet and 1 German.

~~Card 31/33~~

AUTHOR: Keldysh, V.V. (Moscow)

TITLE: Application of the Thin Airfoil Theory to the Calculation of the Aerodynamic Characteristics of a Wing of Small Aspect Ratio With Gondolas at the Ends (Prilozheniye teorii tonkogo tela k raschetu aerodinamicheskikh kharakteristik kryla malogo udlineniya s gondolami na kontsakh)

PUBLISHED: 40-22-1-12/15

PERIODICAL: Prikladnaya Matematika i Mekhanika, 1958, Vol 22, Nr 1, pp 126-132 (USSR)

ABSTRACT: The coefficients for the lifting force and the longitudinal moment are calculated for a plane wing of small aspect ratio which supports two axially symmetrical Gondolas at its ends. The axes of the Gondolas are laid in parallel with the wing axis and their ends terminate with the end of the wing. The problem is solved with the aid of a conformal mapping so that the profile of the cross section of the wing consisting of two separate circles and a connecting line between them is transformed with the gondolas onto a multiply cut image plane. For this image plane the solution function can be given and can be retransformed into the original plane. From this the lift distribution as well as the moment distribution can be

Card 1/2

Application of the Thin Airfoil Theory to the Calculation of the Aerodynamic Characteristics of a Wing of Small Aspect Ratio With Gondolas at the Ends 40-22-1-12/15

determined. The results are given in a detailed table and in several diagrams. The load distribution over the wing and the gondolas shows that the mutual influence becomes stronger, if the gondolas draw nearer to each other. In the neighborhood of the gondolas the load of the wing is stronger than the corresponding load of an isolated wing. The lifting forces in the central part of the wing profile do not depend on the form of the gondola and are exclusively determined by the relative radii at the beginning and at the end of the gondola. The calculations can be also applied for supersonic velocities too, however, only in that part in which the disturbances starting from the corners of the gondolas do not superpose over the wing. There are 8 figures, 1 table, and 2 references, 1 of which is Soviet, and 1 American.

SUBMITTED: August 3, 1957

Card 2/2

KELDYSH, V. V. (Moscow)

"Small Aspect Ratio Wing Interfering with Fuselage and Stores at Wing Tips."

report presented at the First All-Union Congress on Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb 1960.

KELDYSH, V.V. (Moskva)

Exact solutions for lifting systems with one or two compression shocks. Inzh.zhur. 1 no.3:22-39 '61. (MIRA 15:2)
(Aerodynamics, Hypersonic)(Airfoils)

S/258/63/003/001/005/022
E191/E135

AUTHOR: Keldysh, V.V. (Moscow)

TITLE: Flow around propeller blades with flow separation

PERIODICAL: Inzhenernyy zhurnal, v.3, no.1, 1963, 37-46

TEXT: Existing methods of the aerodynamic analysis of aircraft propellers are based on the strip theory, by which propeller sections behave as wing sections, subject to a correction due to the induced flow of the free vortices in the slipstream. In flow without separation the strip theory has been experimentally verified. Separation on a propeller blade takes a different form from that on a wing. Quoting the present author's experimental work on propellers with pressure tappings, pressure plots are reproduced showing a continued increase of suction pressure over the upper blade surface with increasing incidence beyond the stall. Thus, the maximum lift coefficient of blade sections is much larger than that of wing sections. The difference increases with the approach to the axis of rotation. The explanation is believed to lie in the centrifugal forces. The layer of air adjoining the blade in the separation region moves with the blade and maintains

Card 1/3

a pressure gradient balancing the centrifugal field. The strip theory is no longer valid. In the present analysis it is assumed that the pressure distribution above the blade is identical to that in a tube rotating with the blade and the pressure distribution below the blade is derived from strip theory. The pressure distribution in a rotating tube is found from the centrifugal field, taking into account the compressibility of the air and a density variation in accordance with the adiabatic law. At the end of the open tube the pressure corresponds to that in the separated zone of a stalled wing having a profile identical with the tip profile of the blade. At the trailing edge of the blade, there is an equalisation of pressures between the upper and lower surfaces but its effect is small. The thrust coefficient of the propeller is expressed as a sum of two components, of which one is computed by the ordinary methods of strip theory and the other is the correction for the effect of rotation. In the absence of experimental data, the profile characteristics are used. Beyond the stall, the pressure distribution is nearly triangular and the thrust component is obtained from this assumption.

Card 2/3

Flow around propeller blades ... S/258/63/003/001/005/022
E191/E135

Numerical computations with and without consideration of centrifugal forces are compared with thrust measurements in the region of separated flow. Without centrifugal force analysis, the computed thrust is much too low. An analytical integration is possible for constant chord blades. An approximate method for thrust evaluation is given using integrations which are numerically tabulated over a range of blade radii and Mach numbers. There are 6 figures and 2 tables.

SUBMITTED: July 13, 1962

Card 3/3

ACCESSION NR: AP4043528 S/0258/64/004/003/0539/0542

AUTHOR: Keldy*sh, V. V.(Moscow)

TITLE: Flow over ducted bodies in the presence of plane and conical shock waves

SOURCE: Inzhenerny*y zhurnal, v. 4, no. 3, 1964, 539-542

TOPIC TAGS: supersonic flow, plane shock wave, conical shock wave, ducted body flow, wave drag, air intake

ABSTRACT: Examples are given of accurate solutions for flow over ducted bodies when the velocity at the duct inlet is supersonic, and the corresponding wave drag coefficients are calculated. Two types of body with no lift (i.e., an air intake) are considered: 1) bodies formed by plane facets in a flow with reattached shock waves, and 2) axisymmetrical bodies in a conical flow. The results of the author's previous work are used for the investigation of flow around bodies of the first group with triangular and hexagonal duct sections. Expressions are derived which give the relationship between the geometric characteristics of the bodies and their corresponding wave drag.

Card 1/2

ACCESSION NR: AP4043528

Calculations for axisymmetrical bodies for which the flow is of a conical pattern were made on a computer for a velocity range $M \geq 6$. Results presented by means of graphs show that at an equal aspect ratio the bodies of the first group have a smaller wave drag coefficient than those of the second group. Orig art. has: 6 figures and 5 formulas.

ASSOCIATION: None

SUBMITTED: 23Dec63 ATD PRESS: 3088 ENCL: 00

SUB CODE: ME NO REF SOV: 004 OTHER: 000

Card 2/2

L 41162-65

L 41167-65
ACCESSION NR: AP5002605

derived and its variation with angle of attack α is presented in graphical form for various sweepback angles χ. An analysis of the curves shows: 1) the wave drag decreases with increased sweepback angle; 2) the effect of the angle of attack can be practically neglected up to $\chi=30°$; 3) for wings with $\chi>30°$, this effect is very significant and when $\alpha\neq0$ the drag is many times the corresponding value of the drag at $\alpha=0$. The effect of M, in general, decreases with increased value of α and χ. Thus, for delta and sweptback wings with $\chi>30°$, the increase of the angle of attack may lead to a substantial increase in wave drag of the blunt leading edge. Orig. art. has: 5 figures and 7 formulas.

ASSOCIATION: none

SUBMITTED: 02Mar64 ENCL: 00 SUB CODE: ME, AS

NO REF SOV: 001 OTHER: 002 ATD PRESS: 3166

Card 2/2 me

KELDYSH, V.V. (Moskva)

Flow about ducted bodies with plane and conic shock waves. Inzh.zhur. 4 no.3:539-542 '64. (MIRA 17:10)

KELDYSH, V.V. (Moskva)

Resistance of a swept-back blunt wing edge at hyper[illegible] speeds.
Izv. AN SSSR Mekh. i mashinostr. no.5:145-147 S-O '64.
(MIRA 18:1)

L 16418-66 EWT(1)/EWP(m)/EWA(d)/EWA(h) WW
ACC NR: AP6007588 SOURCE CODE: UR/0040/66/030/001/0189/0193

AUTHOR: Keldysh, V. V. (Moscow)

61
B

ORG: none

TITLE: Intersection of two plane shock waves in space

SOURCE: Prikladnaya matematika i mekhanika, v. 30, no. 1, 1966, 189-193

TOPIC TAGS: aerodynamics, supersonic flow, shock wave, reflected shock wave, weak shock wave, compression shock wave, shock wave analysis, shock wave interaction

ABSTRACT: The problem of intersection of two plane compression shock waves in space is considered. The interaction of two shock waves in space is analyzed in the symmetrical case, that is, when the velocity of a free flow is parallel to the plane bisecting the angle between compression shock waves. This problem is equivalent to the reflection of a shock wave from a solid wall. The determining parameters are: the angle $2\gamma_1$ between two planes, the free flow Mach number M_∞, and the

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slope of the free flow velocity vector with respect to the line of intersection of the shock waves β (see Fig. 1). It is shown that in contrast to the two-dimensional case, where the solution is unique, a region of variation of the parameters is present in which two solutions with weak reflected shocks exist behind which the velocity is supersonic. Two expressions are derived which set the limits of

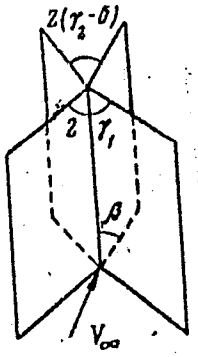

Fig. 1. Intersection of two shock waves

the region where two solutions exist. Two such regions calculated for $M_\infty = 20$ and 5 are presented in a graph. One or the other solution must be realized in a flow past a certain surface formed by the field velocity vector of the flow. A body composed of four plane faces is shown as an example where four compression shocks represented by a broken line (see Fig. 2) rest on the edges. For certain

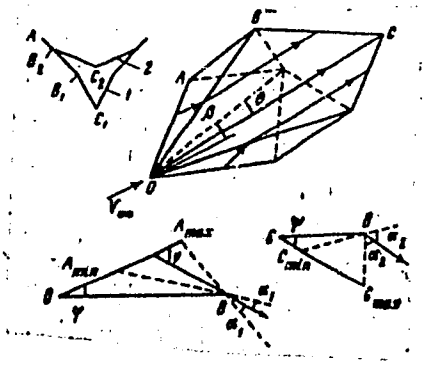

Fig. 2. Body configuration

shock configurations, the surface AB_2C_2 evolves into a V-shaped wing, on which a

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region of increased pressure located behind the reflected shock exists near the edge. Orig. art. has: 9 figures and 14 formulas. [AB]

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